

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
(MBHB Case No. 00,474; MMID 590)

In the Application of:

Denis L. Babin

Serial No. 09/595,133

Filed: June 16, 2000

For: Method for Fast Manufacturing and Assembling
of Hot Runner Systems

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) Before the Examiner:
) Hamilton, Isaac N.

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) Group Art Unit: 3724
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Mail Stop Non-Fee Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

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TECHNOLOGY CENTER R3700

DECLARATION PURSUANT TO 37 C.F.R. SECTION 1.132

Dear Sir:

I, Terry Schwenk, residing at 9030 32nd Avenue, Kenosha, Wisconsin 53142, hereby
declare:

1. I am one of three Sales Managers for North America for Mold-Masters Limited
("MML"), the Assignee of the above-captioned patent application.

2. I have worked in the plastics manufacturing industry for the past 29 years.
During this period, I have worked for MML in the hot runner industry for the last 16 years. I am
a Member of the Society of Plastics Engineers. In this capacity, I was a member of the Board of
Directors Mold Making & Mold Design Division, and I acted as Division Chair.

3. Injection Molding is a process of manufacturing plastics parts for various

applications such as automotive, packaging, medical, appliances, computers and communications. In the injection molding process, solid plastics pellets are melted and pressurized by a machine barrel. The pressurized melt is then injected into a mold that may have one or multiple mold cavities. Once the melted plastic is in the mold, it cools to a shape that reflects the design of the mold cavity. The mold cavity duplicates the final shape of the molded part.

4. The vast majority of injection molding is done using cold runner systems, where the hot plastic is directed into the mold cavity via unheated runners. In order to improve the quality of the molded parts and reduce the consumption of plastics, many injection molders are using the more advanced hot runner systems. The hot runner systems include two key components that are not present in the cold runner systems. One is the heated injection manifold, and the other is the heated hot runner nozzle. The manifold has melt channels used to evenly distribute the melted plastic to a plurality of exits. These manifold channels exit to communicate with an equal number of heated hot runner nozzles that deliver the molten plastic to a single mold cavity (or multiple mold cavities) in the required processing condition. Therefore, a hot runner system is in essence highly specialized manufacturing equipment that serves as the plastics delivery system to a mold cavity. It keeps the plastic resin "running" in a melted or "hot" state - hence the name "hot runner."

4. Due to the customization, complexity, and precision associated with hot runner manufacturing systems (or equipment), it has traditionally taken 6-8 weeks at least, and frequently even longer, to design, engineer, manufacture, and assemble hot runner systems, after a customer requires a new hot runner system. This is because each new plastic component, such as for example a new closure for a bottle, or a new bumper for a car, requires the design and the

manufacturing of a new and customized manifold, a new and customized nozzle, and other customized hot runner components. Because of the different geometry, size, material, and color, no new molded part can be injection molded by an existing or retrofitted hot runner system. More specifically, both the engineering and manufacturing of a hot runner system has been traditionally started and completed as a one step process initiated only after the specific order comes from a customer. After the lengthy design and engineering of a customized hot runner system, the traditional methods have also needed another 3-4 weeks for manufacturing and assembling the hot runner system, with time-consuming tooling and machining operations being required.

5. For many years there has been a great demand in the hot runner industry for dramatically reducing the time it takes to engineer, manufacture, and assemble hot runner systems based on customers' specific design criteria.

6. MML has created a new fast and optimized process for engineering, manufacturing, and assembling hot runner systems commercially known as MIM Speed ("Speed"). MML's Speed is disclosed in the above-captioned patent application, and has satisfied the customer demand for an expedited process for obtaining a hot runner system. MML's Speed has enabled customers to obtain hot runner systems that are engineered, manufactured, and assembled based on customer design selections in less than half the time it would have taken under traditional methods. In many cases, the hot runner systems can be completed in a matter of days, rather than weeks.

7. With MML's Speed, the design and engineering time for a hot runner system is reduced from a week (or weeks) to a matter of hours, usually less than a day. This is possible because in Speed's design and engineering method, the customized hot runner design starts,

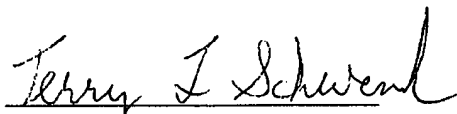
unlike in other systems, from an already pre-designed hot runner system. This pre-designed hot runner system is based on, and linked to, a range of pre-manufactured hot runner systems (including pre-manufactured manifolds, manifold plugs and other hot runner components) that have been designed and manufactured up to a certain degree even before the customized order is received from the customer. The pre-designed and pre-manufactured systems are accessible from a data base linked to design blue prints and an inventory of pre-manufactured components. The new concept of having the pre-designed and pre-manufactured inventories of hot runners systems and accessories saves weeks of design and manufacturing. By pre-designing and partially manufacturing hot runner system components in a first phase prior to taking a customer's order, MML's Speed significantly reduces the traditional 3-4 week manufacturing and assembly time to less than week. Unlike any other known fast design and manufacturing hot runner system, MML's Speed provides an inventory of pre-designed and pre-manufactured hot runner key components (such as manifolds, manifold plugs, nozzles, etc.) that are removed from the inventory after a specific order with customized final geometries and sizes is received from a customer. Consequently, MML's Speed provides an optimized solution to manufacture, in record time, a customized hot runner system that can be used to injection mold a broad variety of different plastic components.

8. The reduction in engineering, manufacturing, and assembling time provided by Speed allows MML to serve new customers who cannot afford to wait for weeks to receive a customized hot runner system to further manufacture new molded parts. Many of MML's customers have provided extremely positive feedback that the process disclosed in the above-captioned patent application maintains the desired flexibility for customizing hot runner systems, while permitting such customized hot runner systems to be engineered, manufactured and

assembled in a matter of days rather than the traditional 6-8 week time period.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Date: November 26, 2003


Terry Schwenk
Sales Manager For North America
Mold-Masters Limited